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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/690,794      | 10/22/2003  | James Scott Vartuli  | 131653              | 5619             |

7590 11/22/2004

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| EXAMINER |
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KOSLOW, CAROL M

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1755

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/690,794

Applicant(s)

VARTULI ET AL.

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/22/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

The disclosure is objected to because of the following informalities: The status of application 10/316,151, cited in paragraph [0001] needs to be updated. Appropriate correction is required.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The variable "y" is not defined in this independent claim.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(d) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

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has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of U. S. patent 6,669,866 is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 3, 9-11 and 13 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by WO 01/08453.

The abstract and the formulas on page 3 and 5 teach a luminescent composition having the formula  $(\text{Tb}_{1-x-y}\text{SE}_x\text{Ce}_y)_3\text{B}_5\text{O}_{12}$ , where x is 0 to 0.5-y, preferably 0-0.2, most preferably  $x=0.01$ ,  $0 < y < 0.1$ , preferably 0.01-0.5, B is at least one of Al, Ga and In and SE is at least one of Y, Gd, La, Sm and Lu. Page 6 teaches a luminescent composition with the formula  $(\text{Tb}_{0.67}\text{Y}_{0.29}\text{Ce}_{0.04})_3\text{Al}_5\text{O}_5$ . The subscript of oxygen is a clear error and is known to be 12 from the other formulas and the teaching of the abstract. Thus the reference teaches a composition with the formula  $(\text{Tb}_{0.67}\text{Y}_{0.29}\text{Ce}_{0.04})_3\text{Al}_5\text{O}_{12}$  which falls with the formula of claims 3, 9-11 and 13. The reference clearly teaches the claimed compositions.

Claims 1, 3, 5, 6, 8, 9 and 13 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by WO 01/08452.

Claims 1, 3, 5, 6, 8, 9 and 13 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. patent 6,669,866.

U.S. patent 6,669,866 is the English language equivalent for WO 01/08452.

Embodiments 2 and 6-7 teach luminescent compositions having the formulas  $(\text{Tb}_{0.96}\text{Ce}_{0.04})_3\text{Al}_5\text{O}_{12}$ ,  $(\text{Tb}_{0.96}\text{Ce}_{0.04})_3\text{Al}_4\text{GaO}_{12}$  and  $(\text{Tb}_{0.96}\text{Ce}_{0.04})_3\text{Al}_3\text{Ga}_2\text{O}_{12}$ . These formulas fall within those claims 1, 3, 5, 6, 8, 9 and 13. The references clearly teach the claimed subject matter.

Claims 2 and 3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. patent 4,807,241.

This reference teaches a luminescent composition having the formula  $\text{Lu}_{3-x}\text{Ce}_x\text{Al}_{5-w}\text{Ga}_w\text{O}_{12}$ , where  $0.01 < x < 0.3$  and  $1.8 < w < 2.2$  (col. 2, lines 55-57). This formula can be rewritten as  $(\text{Lu}_{1-x'}\text{Ce}_{x'})_3\text{Al}_{5-w}\text{Ga}_w\text{O}_{12}$ , where  $0.003 < x' < 0.1$  and  $1.8 < w < 2.2$ . This formula falls within the claimed formulas. The reference teaches the claimed compositions.

Claims 1, 3, 8-11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,596,195

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

This reference teaches a luminescent compositions having the formulas  $(\text{Tb}_{1-y}\text{Ce}_y)_a\text{Al}_{4.9}\text{O}_{12}$ , where  $y$  is about 0.0005-0.2 and  $a$  is about 2.8-3 (col. 4, lines 3-4). This formula falls within that for claims 1, 3, 9, 10 and 13. In column 4, lines 5-26, the reference teaches the formulas of claims 8, 9 and 11. These formulas also fall within the formula of claims 3 and 13.

The teaching in lines 18 of column 4 teaches that w can be 0, which is the subject matter of claim

10. The reference teaches the claimed compositions.

Claims 1-11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,630,077.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

This reference teaches a scintillator composition having the formula that falls within that of claims 3 and 13 (col. 4, lines 50-66), claims 1 and 13 (col. 5, lines 5-8), claims 1, 3, 5-7 and 13 (col. 5, lines 11-15), claims 3, 8 and 13 (col. 5, lines 16-25), claims 3, 9, 10 and 13 (col. 5, lines 26-31) and claims 3, 11 and 13 (col. 5, lines 34-36). Table 1 teaches  $(\text{Lu}_{0.97}\text{Ce}_{0.003})_3\text{Al}_5\text{O}_{12}$ , which falls within the formulas of claims 2-4 and 13. The reference teaches the claimed compositions.

Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,793,848

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived

from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

This reference teaches a scintillator composition having the formula that falls within that of claims 3, 6, 7 and 13 (col. 4, lines 20-24 and col. 7, lines 2-9), claims 3 and 13 (col. 4, lines 6-19 and col. 6, lines 50-63), claims 1, 3, 5 and 13 (col. 6, lines 36-42 and col. 6, line 65-col. 7, line 1), claims 2-4 (col. 6, lines 44-49 and col. 6, line 64), claims 3, 8 and 13 (col. 7, lines 20-25), claims 9, 10 and 13 (col. 7, lines 26-30), claim 12 (col. 7, lines 31-33) and claims 3, 11 and 13 (col. 10, lines 57-64). Column 9, line 60 through column 10, line 54 also teaches the composition of claims 1, 3, 5-10. The reference teaches the claimed formula.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/08453.

The abstract and the formulas on page 3 and 5 teach a luminescent composition having the formula  $(\text{Tb}_{1-x-y}\text{SE}_x\text{Ce}_y)_3\text{B}_5\text{O}_{12}$ , where x is 0 to 0.5-y, preferably 0-0.2, most preferably  $x=0.01$ ,  $0 < y < 0.1$ , preferably 0.01-0.5, B is at least one of Al, Ga and In, preferably Al and/or Ga, and SE is at least one of Y, Gd, La, Sm and Lu. The basic formula of subscripts of 3 and 5 fall within the claimed values of a and z. The taught values of x and y overlap the claimed values of x and y. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re*

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*Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The taught formula suggests the formulas of claims 1, 3, 5-7 and 9-13. The teaching that B can be at least one of Al, Ga and In suggests to one of ordinary skill in the art that B can be rewritten as  $Al_{1-q}Ga_qIn_p$ , where q is 0-1 and p is 0-1, where  $q+p$  can be less than or equal to 1. This suggested formula overlaps that of claim 8. This reference suggests the claimed compositions.

Claims 1, 3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 0108452 or U.S. Patent 6,669,866.

Both of these references teach a luminescent composition having the formula  $(Tb_{1-x-y}RE_xCe_y)_3B_5O_{12}$ , where x is 0-0.2, preferably  $x=0.01$ ,  $0 < y < 0.1$ , preferably 0.01-0.5, B is at least one of Al Ga, and SE is at least one of Y, Gd, La, and Lu. The basic formula of subscripts of 3 and 5 fall within the claimed values of a and z. The taught values of x and y overlap the claimed values of x and y. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The taught formula suggests the formulas of claims 1, 3, 5-7 and 9-13. The examples shows B can be at least one of Al and Ga, thus one of ordinary skill in the art would know B can be rewritten as  $Al_{1-q}Ga_q$ , where q is 0-1. This suggested formula overlaps that of claim 8. This references suggest the claimed compositions.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,246,744.



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This reference teaches a scintillator composition comprising praseodymium activated  $\text{Lu}_3\text{Al}_5\text{O}_{12}$  (col. 4, lines 20-35). While the reference does not teach the amount of praseodymium, one of ordinary skill in the art knows it should be present in that amount which activates the scintillator, which would be expected to overlap or be that claimed since the claimed amount appears to be that amount which is effective to activate the scintillator. The reference suggests the claimed composition.

Claims 2-4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,278,832.

This reference teaches a scintillator composition comprising cerium activated  $\text{Lu}_3\text{Al}_5\text{O}_{12}$  (col. 6, line 66). While the reference does not teach the amount of cerium, one of ordinary skill in the art knows it should be present in that amount which activates the scintillator, which would be expected to overlap or be that claimed since the claimed amount appears to be that amount which is effective to activate the scintillator. The reference suggests the claimed composition.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,552,487.

This reference teaches a luminescent composition having the formula  $(\text{RE}_{1-x-y}\text{Pr}_x\text{Ce}_y)_3(\text{Al,Ga})_5\text{O}_{12}$ , where RE is at least one of Y, Sc, Tb, Gd, La and Lu,  $0.01 < y < 0.2$  and  $0.00001 < x < 0.05$ . The  $x+y$  values overlap the claimed  $y$  values. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed composition.

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The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 3, 8-11 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,596,195.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the formulas of the luminescent compositions claimed in the patent have variables that overlap or fall within those claimed in this application and the metal in the taught formulas can be those claimed in this application. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960).

Claims 1-7, 9-11, 13 and 14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10, 24-29, 32 and 33 of U.S. Patent No. 6,630,077. Although the conflicting claims are not identical, they are not patentably distinct from each other because the formulas of the luminescent compositions claimed in the patent have variables that overlap or fall within those claimed in this application

and the metal in the taught formulas can be those claimed in this application. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960).

Claims 1-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 19-27, 37, 54 and 72 of U.S. Patent No. 6,793,848. Although the conflicting claims are not identical, they are not patentably distinct from each other because compositions of claims 17-27 are those of claims 1-12 and the compositions of claims 19 suggest that of claims 13-15 since the x, y, a and z variables of the patent overlap those of claims 13-15 of this application. The claims of the patent teach the composition of claim 19 are annealed by the process of claim 1, which is the same as the process of claim 16 of this application, and that produces the scintillator of claim 54 and detector element for an X-ray CT scanner comprising the scintillator of claim 54. The compositions of claims 19, 54 and 72 suggest that of claims 16-24 since the x, y, a and z variables of the patent overlap those of claims 16-24 of this application. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

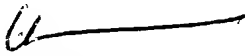
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at (571) 272-1362.

The fax number for all official communications is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk  
November 18, 2004

  
C. Melissa Koslow  
Primary Examiner  
Tech. Center 1700